

#### ABSTRACT OF THE DISCLOSURE

A non-coherent frequency shift key demodulator comprising an oversampling device, a chain of registers, and a threshold device is disclosed. The oversampling device receives an input digital non-coherent frequency shift signal, and examines for 5 transitions therein, and thereby generating data bit signals in the form of logic high level '1' or logic low level '0' accordingly. The chain of registers receives, counts and stores the number of 1's data bit signals. Following, the threshold device compares the stored number of 1's in the chain of registers with a predetermined threshold value to extract the digital signal of the input digital non-coherent frequency shift signal. The non- 10 coherent frequency shift key demodulator, by the use of a simple circuit and implementation, combats miscellaneous system impairments, such as frequency offset, and further support multi-rate transmission.